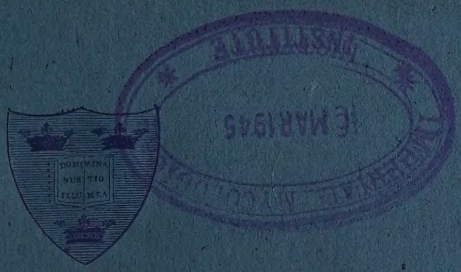

The Imperial Forestry Institute University of Oxford

TWENTIETH ANNUAL REPORT

1943—44

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UNIVERSITY OF OXFORD

TWENTIETH ANNUAL REPORT OF THE IMPERIAL FORESTRY INSTITUTE ACADEMIC YEAR, 1943—44

WITH the almost complete drying up of the normal sources of recruitment of students for forestry, *viz.*, men with Honours degrees or men who have passed Honour Science Moderations, the numbers attending courses were at their lowest ebb since the School of Forestry was opened at Oxford in 1905. This is in contrast with the position at the other University Schools of Forestry in the country, where classes of a fair size have been maintained. The reason for this is the fact that elsewhere undergraduates approaching calling-up age have registered as forestry students and applied for deferment of service in the Forces, and it has been granted. At Oxford, owing to the fact that students intending to read forestry do not work in the Department of Forestry for their first one or two years, they have not been classified as forestry students and deferment has not been granted to them. Accordingly the only undergraduate was one student whose course was broken by his joining H.M. Forces in 1939, and who had been invalided from the Army. An ex-Ranger from British Honduras who wished to utilise the opportunity available to him after a period with a Logging Unit in Scotland, before he returned to America, also attended lectures in Hilary and Trinity Terms. There should have been a post-graduate class of five men of the Colonial Service returning from their 'Apprentice Tour' in the Colonies, but for reasons directly connected with the war, only two, from Tanganyika and the Gold Coast respectively, presented themselves. One Colonial Forest Service officer from British Guiana attended the Institute for his 'Refresher Course.'

One advanced student for the D.Phil. continued work under the supervision of the Professor.

Arrangements for practical work in the field continued on the lines of previous years, being limited to the Forest of Dean and New Forest areas and the Hampden Woods in the Chilterns, where facilities were available through the courtesy of the Forestry Commission and the Earl of Buckinghamshire (through his Agent, Mr. O'Hara Taylor) respectively. Visits were made to the usual forests, saw-mills, etc., within reach of Oxford, and one new rather more distant area was included by going to the extensive plantations around Thetford, where the Divisional Officer of the Forestry Commission arranged a most instructive day. Valuable help was also given by the Director and Staff of the Forest Products Research Laboratory in

Utilisation subjects, which are naturally particularly important during war time.

Training facilities at the University have been greatly improved by the recent acquisition of the Wytham Woods, the gift of Mr. Raymond ffennell. These woods are only a few miles from the City and, though silviculturally not at present in good condition, will be extremely valuable for instruction and research work in silviculture and management. Technical management will be in the hands of the Department of Forestry and a working plan is being drawn up. A forester will be appointed and a nursery made as soon as labour conditions permit. A considerable amount of planting work will need to be done to bring the blanks and the most thinly stocked parts of the area into production at an early date. The woods occupy about 800 acres and are almost entirely hardwood, mostly oak and ash with sycamore locally abundant and regenerating freely; there are only a few acres of larch and Douglas fir.

In this connection, it may be mentioned that several discussions have taken place between the Forestry Commission and the heads of the four University Forest Schools with regard to post-war training and educational facilities, and it is hoped that a 'demonstration forest' will be selected in England, and another in Scotland, in which special facilities will be available for students and teaching staff, and management will be on lines most appropriate for meeting instructional needs. There is at present a marked lack of facilities for advanced instruction in most Utilisation subjects, but there are good grounds for hoping that after the war the Forest Products Research Laboratory will be in a position to meet requirements in this direction as a recognised part of its activities. This would be of the greatest value, particularly to men with practical experience of forestry coming to Oxford for refresher and specialist courses.

The action of the University Committee for Forestry in keeping its post-war plans pending till the Forestry Commission's plans were published was unfavourably criticised in the Press as indicating undue concern with Home forestry to the assumed detriment of Empire forestry. The position is that the Institute continues to be concerned with Forestry as a science and profession of world-wide importance. Whilst giving to Empire forestry, especially in its Colonial aspects, the attention to which it is entitled in view of its intrinsic importance and the proportionately high number of students under training for the Colonial Forest Service, the rapidly growing importance of scientific forestry in this country and the obligations resting in the Oxford School of Forestry as the only University Forestry School in England are facts which must receive the fullest consideration in formulating educational and research policies. When the White Paper was published it was found that its main provisions in the educational sphere were such that no change in the Committee's draft was necessary.

It has not been possible owing to the continuation of the war to implement many of the recommendations made by the Committee for Forestry in its report of last year, but such steps as were possible

have been taken. The chief of these was the raising of the status of the Degree in Forestry to an Honours Degree. The requisite decree was promulgated on 6th June, 1944, and the claim of Forestry to have, as it were, attained its majority among the branches of science has thus been officially recognised. The main changes which were necessary in the requirements for admission (Honour Moderations in Natural Science as a minimum), in the nature of the courses, and in the methods of instruction, had already mostly been introduced in 1939, but it has been possible to make some further improvements in the light of experience gained in the past five years. It is confidently anticipated that the result will be a rise in the average standard of the students reading forestry and of the end product, the Oxford forest graduate, and that this will more than compensate for the fact, which must not be overlooked, that forestry is a four-year course at this University as in many of the best Schools abroad.

The recommendations for the appointment of a University Lecturer in the Design and Analysis of Biological Experiment was brought before the Board of the Faculty of Biological Sciences and approved, though the post cannot yet be filled. The Institute's facilities for statistical work were greatly improved by a highly appreciated grant from the Christopher Welch Trust permitting the purchase of an electrically operated calculating machine and a second hand-operated machine. These instruments have already been extremely useful and will be even more so when additional staff has been trained in their use.

In the research field the policy continues to be one of aiming at closer integration of the work in the several specialist fields and of focussing the combined effort on major forestry problems. Considerable progress in this direction has been made during the last few years, as is illustrated by the team work in felling areas described in the next paragraph, work in which specialists from University Departments other than Forestry also co-operated, and also by the work now in progress centred round a study of soil survey methods, ecologist, pathologist, mensuration specialist and silviculturist all collaborating with the soil scientist. It is further exemplified by the development of the forest pathology section from a narrow, mainly mycological field, to the wider problems of general forest hygiene, involving an extensive overlap over matters hitherto viewed as ecological and silvicultural, and inevitably studied on lines commonly reserved for the mensuration branch. Steps have been taken to give forest entomology, likewise mainly a branch of forest pathology and hygiene, a similar directive, bringing it into closer contact with the other aspects of practical forestry and roping in the entomologist from his present rather isolated position to closer membership of the general team.

The final report on the collection of data from war felling areas by University teams in 1940 and 1941, long held up owing to staff and secretarial difficulties, has been completed and submitted to the Forestry Commission who financed the work. It is to be anticipated that the further study of these data, taken in conjunction with the considerable additional volume collected by the two officers detailed

by the Forestry Commission to continue the work, and with the big accumulation of growth statistics existing on the permanent sample plot files, will yield much useful information on many aspects of crop growth under different conditions. The task is however a large one calling for adequate staff and use of modern equipment.

Reference was made last year to the team work done in co-operation with Mr. C. G. T. Morison, on testing a new method of soil survey at Mynydd Ddu in Carmarthenshire. The results were discussed with forestry, soil and statistical experts and the decision reached that a further trial should be made, the Forestry Commission agreeing to finance the new work. A suitable area was selected in Caio Forest and a field party spent three periods there during the Easter and Summer Vacations.

The Professor was absent for two months during the summer of 1944, serving in Washington D.C. as United Kingdom representative on a Forestry Sub-Committee of the Interim Commission for Food and Agriculture under the Chairmanship of Dean H. S. Graves of Yale University. The task of the Committee was to make recommendations with regard to a forestry division of a permanent international organisation. During the period spent in America, it proved possible to arrange visits to the Forestry Schools of Yale and Harvard Universities, as well as to the Headquarters of the Canadian Dominion Forest Service at Ottawa and their Research Station at Petawawa.

SILVICULTURE

As part of the normal instruction, studies on the natural regeneration of Scots pine and oak were continued in the New Forest. Dr. E. W. Jones prepared earlier work on the regeneration of Douglas fir for publication and continued his study of the distribution of sessile and pedunculate oaks and their regeneration. He also joined the Caio Forest research team mentioned above, carrying out a vegetation survey for correlation with variations in soil characters and the rate of tree growth. A report on 'The growth of conifers in relation to soil type' has been submitted to the Forestry Commission as a first contribution on the silvicultural aspect of the work carried out at Mynydd Ddu Forest. Significant variations in mean height of crop, with change in soil type, were demonstrated with European larch, Japanese larch and Scots pine. Similar variations were observable to a less degree with Sitka spruce but not with Douglas fir, which, however, had only been planted over a narrow range of related soils. It was also shown that crops become increasingly irregular in height growth with increasing degree of change from a brown forest soil to a fully developed podsol.

The data permit of some analysis of the correlations between mean height growth,, soil depth and the topographical factors of elevation, aspect and slope, and this is being proceeded with.

Work was done on the Bagley Arboretum, including the preparation of a new map.

Mr. R. G. Sanzen-Baker, Forestry Commission Research Officer for England and Wales, remained attached to the Institute. The work carried out in collaboration with Mr. Day on the die-back of European larch and Corsican pine is referred to under Forest Pathology.

The Forest Nursery at Kennington has been extended by approximately 2½ acres, thanks to the generosity of St. John's College in making the land available; this extension will be used mainly for nursery fertility research. This nursery, together with the woodland soil nursery in Bagley Wood, has been maintained by the Forestry Commission research staff for the investigation of problems associated with the raising of tree planting stock. A feature this year has been a demonstration of the advantage of artificial watering of seed-beds, and a trial of automatic sub-irrigation of seed-boxes has been successfully carried out. The principal line of research has been concerned with the preparation and subsequent trials of composts from such materials as bracken, brewery hop waste, sawdust and molinia grass. Composting with organic sources of nitrogen, such as dried blood or sewage filtrate, is proving much more satisfactory than with nitrogen in inorganic form. The various composts are being tested as a means of raising and maintaining soil fertility both in woodland and in non-woodland soils. Results of this work have been very successfully applied in the raising of plantable seedlings in portable seed-boxes.

Work on the vegetative propagation of Norway spruce, *Sequoia sempervirens* and *Sequoia gigantea*, and the use of growth hormones has been continued with interesting results. The large collection of varieties of poplar for use in the new poplar garden in East Anglia has also been propagated by cuttings.

A further important item of work at Kennington has been the raising of planting stock for beech and European larch provenance experiments. A very considerable collection of European larch seed lots was sown this year, and already interesting differences are evident. Other experimental work included such matters as stratification of seed, time of sowing and trials of various organic and inorganic manures.

The nurseries and experiments in progress were as usual valuable for instructional purposes, and demonstrations were arranged by the Forestry Commission staff as required.

MENSURATION AND MANAGEMENT

Mr. W. J. Lambert held charge of the section during the year as a temporary measure. The syllabus for both first and second years was covered. The Vancouver Douglas Sample Plot in Bagley Wood was remeasured. Two of the second year students completed a working plan for part of the High Meadow Woods during three weeks of the Easter Vacation. Weekly excursions were made during the Summer Term to woods as far distant as Thetford, but little of interest from the purely management point of view was found. A fortnight during the Summer Vacation was spent in the woods of the Hampden Estate, carrying out exercises in mensuration and manage-

ment. Mr. J. W. B. Sisam gave lectures on Canadian cruising methods and some time was devoted to aerial survey work.

Research Work. A stand table for Scots pine (England and Wales) was prepared from data supplied by the Forestry Commission, both a graphical and a statistical method being used. Investigations were made into the stem form of some of the coniferous trees in Great Britain, chiefly with the object of finding an equation which expressed stem form more accurately than Behre's equation or the equation of a paraboloid. Basing a conclusion on form quotient data for large sized European larch (data supplied by the Forestry Commission), Behre's equation gives a better fit than the paraboloid. The relationship between top height and mean height in the permanent Forestry Commission Scots pine sample plots was studied, curved regression being found significantly better than rectilinear; standard error was calculated on the basis of curved regression. Work was also carried out bearing on the sampling error of random and systematic cruising, some of A. A. Hasel's data for the Blacks Mountain Experimental Forest being kindly supplied by him from California for the purpose.

STATISTICS

As noted above, the appointment of a University Lecturer in the Design and Analysis of Biological Experiment has been approved, though effect cannot be given immediately. Mr. Lambert gave a course of instruction on elementary statistics with reference to forest mensuration to the second year students. The Department now possesses one electrically operated and two hand operated calculating machines and it is hoped shortly to have a full-time computer. Meanwhile, though two of the laboratory assistants were employed for a good deal of their time on the computation work required in several sections, it was not possible to keep up with the work coming in.

SOIL SCIENCE

The usual courses of lectures and practical instruction were given by Mr. C. G. T. Morison, Reader in Soil Science, and Mr. G. R. Clarke. In view of the increasing recognition that soil science has an important part to play in forestry, the Institute was glad of the opportunity to collaborate with Mr. Morison on a soil survey study in Caio Forest, undertaking co-ordinated studies of ground vegetation, tree growth and rooting behaviour which will, it is hoped, facilitate the practical application of the information derived from the soil survey itself.

FOREST BOTANY

Accessions to the herbarium practically ceased, but poisoning, mounting and filing of specimens already in hand continued until the services of two junior assistants were lost early in April. Facilities were provided in the Herbarium during the last two months of the year for research by Mr. A. P. D. Jones, who is in charge of the Forest Herbarium at Ibadan, Nigeria. This co-operation, which is continuing, will be of great benefit to both Herbaria.

Most of the Curator's time during the year was employed in advisory work for a Government Department.

An account of the vegetation of the South-western Sudan was brought very near completion, in collaboration with Mr. Morison and Mr. Hope Simpson, and will be published as soon as adequate printing facilities are available.

Mr. Brenan has practically completed his work on the second part of the Check-list for Tanganyika Territory and the question of publication is under consideration. Meanwhile, a preliminary examination of literature on Northern Rhodesian plants has been started and all references card-indexed.

FOREST PATHOLOGY

There was no change in staff and the usual courses of instruction and practical work were given in forest pathology and hygiene.

Research. Most of the work has been done in collaboration with the Forestry Commission Research Officer and, as already mentioned, has spread considerably outside the narrow realm usually assigned to pathology. A considerable amount of time was devoted to participation in the soil survey work in Caio forest.

Analysis of 1940-41 data from felling areas. Analysis of the corelation between the incidence of butt-rot in conifers and silvicultural factors such as age of crop, rate of growth as reflected by quality class, and the proportion of the stem occupied by crown, is still being continued, but owing to pressure of other work is proceeding very slowly.

Die-back and needle cast of Corsican pine. Forests in the north of England were visited as the request of the Forestry Commission in the spring of 1944. Material sent in from forests in other parts of England and Wales has also been examined. A widespread and locally serious die-back is occurring; the affected trees show marked symptoms of frost injury, and this is diagnosed as the cause of the condition. Severe needle cast associated with *Hypodermella sulcigena* has also been recorded; no die-back has taken place in connection with this, however, and there is hope that no permanently serious injury will result. Survey of the affected plantations showed, in the case of both the die-back and the needle cast, that disease was most serious in topographical positions where the occurrence of stagnant air was favoured and at the same time relatively good early growth was favoured. The better parts of the plantations were thus the most seriously affected. A short report on these diseases has been submitted after the end of the year under report.

The silviculture and pathology of European larch. Not much progress was made with the examination and analysis of data in connection with this problem, owing to the pressure of other work. An interim report was submitted to the Forestry Commission and it is hoped to be able to take up this work again shortly.

Other items of interest. Specimens of poplar, willow and cherry showing canker have been received from various parts of Scotland and England. Frost injury was in all cases the cause of the disease.

There has been abundant evidence that frost injury has been widespread in 1944 owing to the late frosts which occurred in the spring. It has, however, not caused much permanent damage, although it has been serious locally and on certain species, *e.g.* European larch and Sitka spruce.

There is evidence that bacterial canker of poplar continues to spread on susceptible types, such as *Populus eugenii*. A number of enquiries have been received, most of them relating to the occurrence of Dutch elm disease. One case occurred in the south of England in which *Stereum spadiceum* appeared as a serious cause of rot throughout an oak wood.

FOREST ENTOMOLOGY

Lectures and Laboratory Instruction. Only one second year student chose Forest Entomology as his optional subject for the degree examination. Part of his course consisted of a study, which was carried out at Tubney Wood, Berks., of the hibernation of some British Coccinellids, with special reference to *C. septempunctata* L. The work on the *Adelges* of the Douglas fir, on which other studies were already in progress, was also carried out here.

Advisory and Research Work. More advisory questions have been dealt with this year than for some seasons past. One question which arose on several occasions related to the increase of beech Coccus attack, or rather to the increase of external evidence of such increase. It is thought that we are seeing here the effects of the drought experienced during the past two years. Further enquiry based on extended surveys, on the condition of the beech and incidence of Coccus attack, would appear to be warranted.

Another interesting record came from the South of England, near Bournemouth, where *Myelophilus minor* was found tunnelling in stems of *Pinus maritima*. I am not aware of any record of this species so far south. Unfortunately, only the tunnels were found, and one or two adults; no galleries with broods in them were sent.

The Adelges of the Douglas fir. Work begun early in 1943 at Tubney Wood on this species has been continued and extended to certain areas in the Tintern Woods, and High Meadow, Dean Forest, during the summer of 1944. At Tubney, investigations were somewhat complicated by death from fungus attack of many of the trees under observation. The *Adelges* has been relatively light here this year. Few *Coccinella 7-punctata* were seen in the plantation; they appear to have migrated to adjoining grain crops. If this migration is usual, it must weigh heavily against the value of this ladybird as a natural enemy of the *Adelges*. The studies at Tintern indicated that these woods are not suitable for the more detailed work which

is needed, but one plantation in High Meadow was noted that may serve this purpose and information was received suggesting that the Vyrnwy plantations might also be useful.

WOOD STRUCTURE

Courses, both undergraduate and post-graduate, were run for the small number of students.

Dr. L. Chalk made steady progress with his standing major item of research, *viz.*, the systematic anatomy of dicotyledonous woods, drafts being completed for approximately the same number of families as in the previous year. In addition, a start was made with the preparation of illustrations.

Relatively few timbers were received for identification in comparison with previous years. Wood specimens added to the collection amounted to 155, most of which were received from the Forest Products Research Laboratory, Princes Risborough, and the Royal Botanic Gardens, Kew.

ECONOMICS

The much needed appointment to the Institute staff of a Forest Economist is unlikely to materialise till after the European war. Mr. Day again gave an introductory course on the subject.

FOREST UTILISATION AND ENGINEERING

Dr. Chalk again gave the necessary courses in Forest Utilisation in the absence of Colonel A. H. Lloyd. Difficulties of transport limited the number of excursions, which, however, included visits to Messrs. Wm. Birch and Furniture Industries Ltd. at High Wycombe. The Colonial Forestry Probationers visited the Forest Products Research Laboratory at Princes Risborough and a special series of visits there was made by one senior student.

Under Mr. W. J. Lambert's supervision the students carried out a preliminary road alignment in Bagley Wood.

SURVEYING

No course in surveying was required during the year.

FOREST ENGINEERING

Mr. O. H. Chilton, Reader in Surveying, once again kindly undertook the teaching of Forest Engineering and acted as Assessor in the examination in this subject.

LIBRARY

The comparative statistics for this year and last provide some interesting variations, accessions being fewer, visitors more than twice as many, and student-periods about four times as many. They reflect some improvement in the position as regards receipt of periodicals and the grant of leave to forest officers, and perhaps a spreading public interest in forestry and its post-war potentialities.

	1942-43	1943-44
Accessions.		
Books	61	58
Periodicals	806	1,100
Bulletins, Reports, Working Plans, etc. ...	795	332
Total	1,662	1,490
Loans.		
To Staff	1,378	1,442
To Bureau Staff	1,091	1,055
To Students	158	221
To outside borrowers, personally and by post	452	700
Total	3,079	3,418
Readers.		
Staff and Bureau	995	1,006
Student-periods	153	607
Visitors	260	567
Total	1,408	2,180
Current periodicals being received ...	90	100

Among the accessions were 204 items received through the Imperial Forestry Bureau, 128 by request, chiefly from the United States, and 31 gifts from various sources. Our visitors included 140 in the various Services (22 U.S. Army and Air Force, 14 Royal Air Force, 4 Canadian Army, 2 Royal Australian Air Force, 1 Fighting French), as well as 2 Poles, a Czech and a Norwegian. Members of three or four Government Departments also came to read. One visiting member of the staff of the British Council kindly translated the titles of a set of Japanese biological drawings.

The ten new current periodicals came from Eire, South America, Germany and Portugal. Sales in the library amounted to £5.

Our holdings of separate series of bulletins, reports, etc., with the addition of 26 new ones entered this year, now total 1,213, 1,016 being current. These figures refer, of course, only to the inclusive headings, the series themselves comprising many thousands of individual bulletins, circulars, reports and working plans.

Progress on the Catalogues. During the year 9,010 cards were added to the subject catalogue, and 2,100 to the author catalogue, bringing the totals up to 24,510 and 12,300 respectively. An improvement was introduced in the preparation of the catalogue cards effecting a significant saving in time, labour and space. Even so, the additions represent approximately only a year's intake, and the result is disappointing, as it was hoped to overtake arrears of filing and so to reduce the interval between receiving current literature and making catalogue cards for it available for reference. It was thought desirable to introduce chronological subdivision of sections of the subject catalogue that have become inconveniently large. Three representative sections were rearranged to try out one method, and

led to a decision that, for the present, subdivision into 5-year periods would be preferable to 1-year periods. This procedure will gradually be introduced as opportunity occurs.

During the year, 2,190 of the primary reference slips from which the catalogue cards are made were received from the Bureau. This number is somewhat less than in previous years, as was to be expected from the decrease in the number of accessions.

With regard to the 1936-38 material, rather more than one-third of the cards have been typed in the required form and checked. Progress has unfortunately been even slower than last year, owing to the absence of the library typist through illness, and a special effort will be made to finish off this task immediately conditions permit. Author cards for this material are gradually being added to the catalogue so that some benefit from the work already done may be obtained with the least practicable delay. So far, no subject cards have been prepared for filing.

Persons and organisations who presented material to the library are warmly thanked for their gifts. They are: — Professor Hale Carpenter; Professor H. H. Chapman of Yale University; Professor A. P. Kelley of Landenburg, Pennsylvania; the Librarian, School of Rural Economy; Dr. F. I. van Emden; Mr. P. N. Deogun; Mr. Dahlbeck; Mr. B. S. Doubleday; Current Affairs Ltd., by Mr. E. J. Macdonald; Dr. Chrystal; Dr. Kissin; the High Commissioner for India; the Dominions Office; the British Council; and Lt.-Col. A. H. Oxholm of the United States Army.

FINANCE

The audited accounts of the Department will be published in the *Oxford University Gazette*. The following is a summary of income and expenditure for the year:—

General Account

Income: Forestry Commission, £3,098; Colonies, £4,440; Dominions, Burma and others, £450; Christopher Welch Trustees, £50; other receipts, £76. Total Income, £8,114.

Expenditure: Staff Salaries and Pension Contributions, £6,571; Instructional Supplies, £28; Travelling, £186; Administrative and Miscellaneous Expenses, £929: Instalment on loan from Capital Account, £50. Total Expenditure, £7,764.

H. G. Champion,

Professor of Forestry

(on behalf of the Committee for Forestry).

APPENDIX I

LIST OF STAFF

I. STAFF ENGAGED IN INSTRUCTION AND RESEARCH

PROFESSOR H. G. CHAMPION, M.A. (Oxon.), Fellow of St. John's College. Tropical Forestry, Silviculture and Policy.

*L. CHALK, M.A., D.Phil. (Oxon.), University College. Wood Structure and Properties.

*W. R. DAY, B.Sc., M.A. (Oxon.), Exeter College. Pathology, Forest Hygiene, Economics and Statistics.

*A. H. LLOYD, M.C., M.A. (Oxon.), Exeter College. Forest Engineering and Utilization. (Absent on military duty from 1st September, 1939.)

†W. J. LAMBERT, B.A., B.Sc. (Oxon.), Queen's College. Forest Management and Mensuration.

‡E. W. JONES, M.A. (Oxon.), Ph.D. (Cantab.), Magdalen College. Silviculture and Ecology.

‖J. P. M. BRENAN, B.A. (Oxon.), Brasenose College. Forest Botany.

II. STAFF ENGAGED SOLELY IN RESEARCH FOR THE FORESTRY COMMISSION

R. G. SANZEN-BAKER, B.Sc. (Edin.), Forestry Commission Research Officer for England and Wales. Silviculture.

III. STAFF OF OTHER UNIVERSITY DEPARTMENTS ASSISTING IN INSTRUCTIONAL WORK

R. N. CHRYSTAL, D.Sc. (Edin.), Hon. M.A. (Oxon.). Forest Zoology.

A. C. HOYLE, B.Sc., M.A. (Oxon.), Pembroke College. Forest Botany and Ecology.

O. H. CHILTON, M.A., M.Sc. (Lond.). Reader in Surveying.

C. G. T. MORISON, M.A. (Oxon.). University Reader in Soil Science.

G. R. CLARKE, B.Sc., M.A. (Oxon.), Oriel College. Demonstrator in Soil Science, School of Rural Economy. Soil Science.

IV. OTHER STAFF

Acting Secretary-Accountant: MISS H. M. EDWARDS.
Acting Assistant Secretary: MISS J. M. POLLARD.
Librarian: MISS G. GUINEY.
Assistant Librarian: MISS I. S. T. ASPIN, M.A. (Oxon.).

* These members of the Staff have the status of University Demonstrators, having been reappointed as such with effect from the following dates: Mr. Lloyd, 1/8/44 for one year; the remainder, 1/8/44 for three years.

† Mr. W. J. Lambert was reappointed for one year from 1/10/44.

‡ Mr. E. W. Jones was appointed University Demonstrator on 1/10/40.

‖ Mr. J. P. M. Brenan was reappointed for one year from 1/8/44.